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ABSTRACT

Visions and ideas tend to develop in universities, while private sector corporations possess the material resources needed to convert these visions into products which improve society. However, recent collaborative activities have begun with little regard for the long-term implications of external environmental conditions or the inherent differences in the two types of organizations. The university focus has been on research and teaching, not on service to society. If both universities and corporations work together, they will be able to help reduce the negative consequences and increase the positive effects of change. A recent survey instrument identified social, technological, ecological, political, and economic issues that are the most relevant for university and corporate leaders to address and assess the extent to which they hold divergent perceptions of their counterpart organizations. The findings indicated a consistent perception and sharing of common values regarding the external environment. However, university and corporate leaders do not share common opinions regarding their counterpart organizations and results suggest that executives from each group should learn more about the inherent characteristics and differences in values, resources, and procedures of universities and corporations. Figures and tables are included. (JHP)

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DEVELOPMENT OF A UNIVERSITY-PRIVATE SECTOR SYNERGY FOR PUBLIC SERVICE: A FIRST STEP

by

Lawrence R. Hepburn
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Development of a University-Private Sector Synergy for Public Service: A First Step

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Introduction

The coming decades should include many opportunities for universities and corporations to do the kinds of things society has long entrusted them to do--and more. The need for "legislative solutions" to become "materializations" concurrently with greater acceptance of "privatization" suggest the development of a university-private sector synergy for public service. The logic of such a synergy lies in the fact that the university is the greenhouse of visions and ideas while the private enterprise is the agent that possesses the material resources needed to convert those visions and ideas into experimental seedlings and productive trees.

University-private sector collaboration is not new. Since the early twentieth century, universities and corporations have joined to contribute to the solution of many societal problems and to the development of such products as antibiotics, synthetic fibers, and semiconductors. More recently, dramatic changes in global economics and inventions in technology have stimulated the

establishment of new connections. Personnel exchanges, cooperative training programs, research consortia, joint ventures and other contractual arrangements have been devised to benefit both organizations. However, some university-corporation links, especially those focused on biotechnology, have aroused wide controversy and some critics warn that the inherent differences in the two organizations raise interface problems that can outweigh benefits derived from collaboration.

A perusal of recent collaborative activity leads to two conclusions: (1) It is launched with inadequate regard for the long-term implications of external environmental conditions or the inherent differences in the two organizations. (2) It is focused on research and/or teaching, not on service to the larger society.

By definition, a university-private sector synergy for public service means that the combined action of the two organizations can have a greater effect on improving society (or the community or the environment) than they could have had by independent action. To produce the greatest effect requires: (1) that the focus of action must be sharply defined, and (2) that the combination for action must be smoothly joined. These requirements mean that some first steps must be taken before institutional arrangements are made.

A first step is the development among university and business leaders of some common understanding of the implications that environmental trends hold for the future operations of their own and their counterpart organizations and for society at large. This understanding should lead to some agreement on the ends of

coming together in a synergy. A related step is the development of some common understanding of the nature of the two organizations. This understanding should lead to some agreement on the means of their coming together.

The External Environment

It is not uncommon to hear it said or to read in a business magazine that a particular organization "went under" because management failed to judge the environment correctly and to take appropriate actions. The usual excuse offered by management is that "nobody can tell what the future is going to bring" . . . or "how could we have known that the public would change its attitude or taste for our product?"

One can easily argue today that the external environment* changes with a rate which is far beyond the reach of the intellectual and perceptual capability of the average manager or, for that matter, group of managers. Almost ten years ago, Alvin Toffler defined this gap between one's perceptual capacity and the speed of change in the world around him or her as "future shock."

Management education, both formal and experiential, both at business and public administration schools and at in-house management development programs, has paid little attention to this important phenomenon. But, forecasting just what the future will bring has gained much popular attention. Witness the best-

*This concept is usually called the "external business environment."

seller status of John Naisbitt's book, Megatrends: Ten Directions Transforming Our Lives. (Warner, 1982). In it the author describes forecasts which he warns the reader not to dismiss as "futuristic guessing games." On the contrary, the seeds of the future described have already been sown. The trick is to discern in today's events the shape of tomorrow.

Each of Naisbitt's ten chapters examines a critical restructuring: (1) from industry to information, (2) to high technology with a compensatory human response, (3) from national economy to global economy, (4) from short-term considerations and rewards to longer-term timeframes, (5) to innovation from the bottom up, (6) from institutional help to self-help, (7) from representative democracy to shared decision-making, (8) from dependence on hierarchical structures to informal networks, (9) from the North to the South and West, (10) from either/or choices to multiple options. He concludes that great opportunities exist for those who understand the vast, complex changes now taking place in our world.

In a similar attempt, U.S. News and World Report, in a special report, "10 Forces Reshaping America" (March 29, 1984) presented to its readership the "forces so strong and so widespread that they will dominate U.S. society well into the next century." These forces are: (1) a maturing society, (2) lure of the sun belt, (3) computer revolution, (4) foreign competition, (5) women on the move, (6) rise of minorities, (7) declining superpowers, (8) government under fire, (9) the education boom, and (10) medical miracles.

There are some obvious similarities between the two lists of environmental characteristics. In both cases, the reader is confronted with a laundry list of things that are happening which are important and must therefore be watched. Both presentations also lack a conceptual framework for tying things together.

To make better sense of the external environment one needs to see the interrelationships of things that are happening. The conceptual framework used in the survey described later in this paper is based on the notion that the external environment, the world outside the organization, consists of interrelated sets (or sequences) of emerging issues, i.e., things that society talks about and over which there has been no definite settlement. Or, as The Conference Board puts it, "An emerging issue may be defined as a trend or condition, internal or external, that, if continued, would have a significant effect on how a company is operated over the period of its business plan."

A typical sequence might begin with (1) a social issue, which becomes (2) a technological issue, which turns into (3) an ecological issue, which in turn becomes (4) a political issue, and which ends, finally, as (5) an economic issue. Changes in these issues over time form long-range trends. An example of such a sequence in the future might be the following. It begins with a social issue: an older population.

> The declining birthrate in the 1960s and 1970s will tighten the U.S. labor market in the later 1980s and 1990s as employers compete for fewer younger workers.

This tightened labor market will result in higher wages, lower unemployment, an increase in women workers, delayed retirement of older workers, and more legal and illegal immigration. (See the Rand Corporation research report, "Demographic Challenges in America's Future," The Futurist, December, 1982).

Of course, at the same time society is aging, it is transforming itself from a goods-to-information society. And, ecologically it is being squeezed by the pollution-depletion dilemma. A political trend is globalization: less involvement in domestic issues, more involvement in international ones. Finally, the world economy is characterized by slow growth in "new' industries and decline in mature industries.

Whether or not things happen exactly as descibed is fairly irrelevant. What is relevant is that understanding the environment and the general direction of trends is a prerequisite to shaping the future rather than merely reacting to it. An assumption underlying the proposed university-private sector synergy is that together the organizations can do some shaping to lessen negative consequences of change and heighten positive effects.

Within the context of university-corporation collaboration for public service, which of the external environment's many social, technological, ecological, political, and economic issues are the most relevant for university and corporation leaders to address? To identify the right issues, the authors developed an instrument for scanning the external environment. Twenty-one issues, examples of each of the five types described above, were

distilled from those most commonly treated in popular, business, and education media.

Inherent Characteristics

A second first-step in the development of a university-private sector synergy is the development of some common understanding of the inherent characteristics (or internal environment) of universities and corporations. As mentioned above, ethical and legal issues have been raised in the wake of recent academic-business affiliations, particularly in the realm of biomedical research and genetic engineering. Such issues include: the protection of academic freedom and proprietary rights to inventions, the fair allocation of costs and profits, faculty-employee conflicts of interest, the mixing of public and private monies, patent and royalty policies, and the commercial reorientation of curricula. These issues are quite different from those which arise when two corporations launch a joint venture; differences in value, not merely differences in resources and procedures, are involved.

While important, the above examples of legal and ethical issues are not our primary concern. They are more specific to collaboration for research not public service. Furthermore, they can be hashed out by the particular organizations involved as long as each side understands and respects the other's core objectives, responsibilities, and values.

Not issues, but the inherent differences of universities and corporations which give rise to issues, are the main concern here. If the two agencies are to function synergistically, these

differences in purpose, organization, and management--whether real or perceived--must be addressed and--if real--accommodated.

Stereotypes abound:

"Universities are inclined toward welfarism and socialism, not private enterprise." "A Corporation's so-called social responsibility is merely P.R." "Compared with businesses, universities are poorly managed." "Corporation executives are interested only in short-term paybacks." "Universities hire personnel (professors) to do one thing but reward them for doing something else, corporations don't do that."

The tenor of these quotations indicates not only the force of stereotypes, but also that universities and corporations are perceived to be very different kinds of organizations staffed by very different kinds of people.

To determine whether or not this is the case, the authors devised an instrument to assess the extent to which university and corporation heads hold divergent perceptions of their counterpart organizations. Consisting of seven opinion-statements distilled from popular, business, and education media, this instrument was combined with the instrument for scanning the external environment and administered in the form of a survey questionnaire.

The Sample

In May, 1983, the authors sent questionnaires to the presidents or chancellors of 328 universities and to the presidents or chairmen of 341 corporations. Only institutions with graduate programs were selected as they would more likely be

involved in public service activities than those with only undergraduate work. The university group included at least one public land grant institution in each state. The business group represented corporations randomly drawn from the Fortune list of the top 2,200 U.S. corporations.

The completed questionnaires were returned as follows:

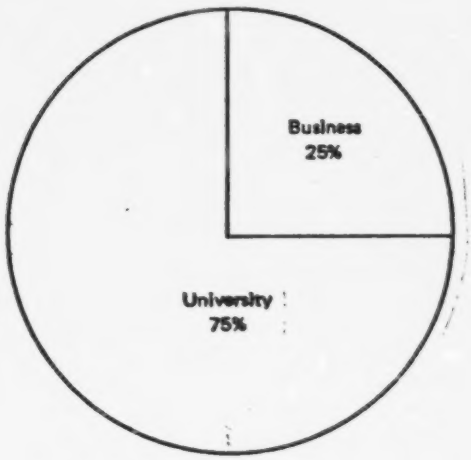
University:	165 of 328	(response rate: 50.3%)
Business:	54 of 341	(response rate: 15.8%)
Total	219 of 669	(response rate: 32.7%)

The demographics reported in Figure 1 indicate that large organizations predominate in the sample. They tend to be more organized for public service or community outreach than smaller ones. The private sector is fairly represented by the mix of corporations in the sample. Likewise, the public/private breakdown reflects the university population.

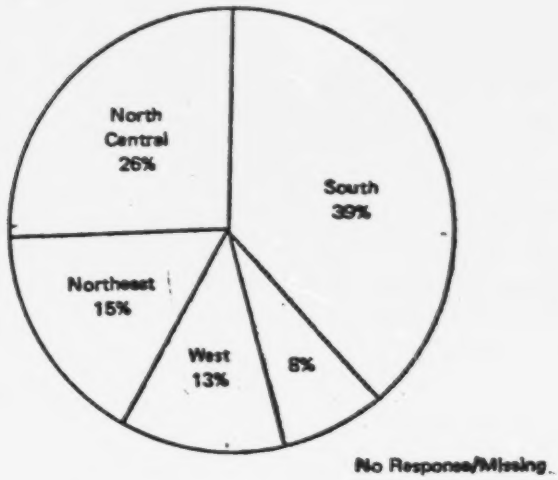
The much higher response rate from universities is probably explained by (a) greater interest in the subject, (b) greater sympathy with the data collection techniques, and (c) greater familiarity with the sponsoring organization. The cover letter from the President of the University of Georgia likely had more influence on his peers (not to say personal acquaintances) in other universities than on corporation executives. Likewise, the unrepresentative nature of the geographic distribution probably has to do with the University of Georgia's southern location.

Figure 1. Characteristics of the Sample

1. Organization Type



2. Geographic Location



3. Organization Size

a. Universities

(Number of Students, Range: 900 – 60,000)

Range	*Frequency*
Under 1,000 students	1
1,000 – 4,999 students	42
5,000 – 9,999 students	44
10,000 – 19,999 students	48
20,000 – 49,999 students	24
50,000 or more	3
missing	3
	165

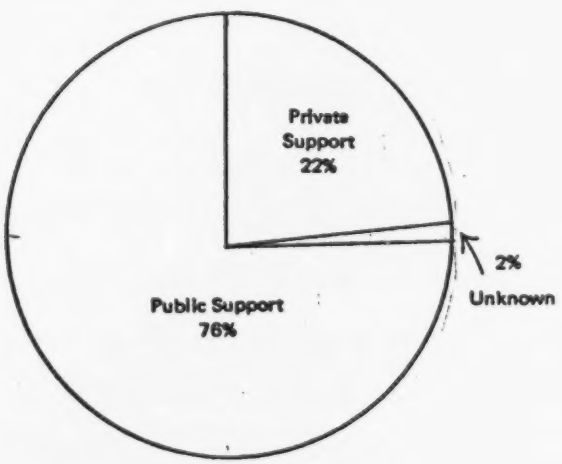
b. Corporations

(Number of Employees, Range: 134 – 75,000)

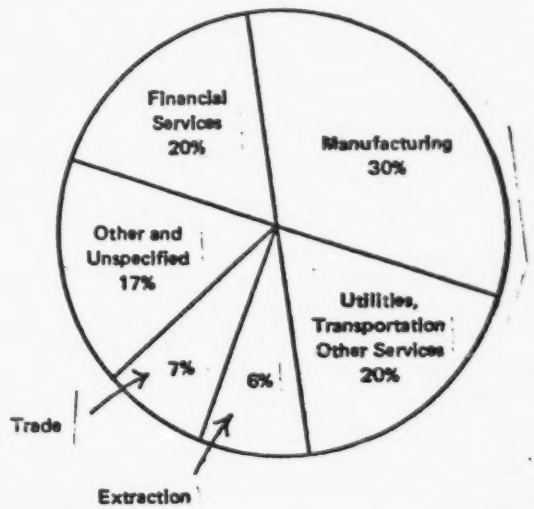
Range	*Frequency*
Under 500 employees	3
500 – 999 employees	2
1,000 – 1,999 employees	9
2,000 – 4,999 employees	20
5,000 or more employees	16
missing	4
	54

4. Organization Sources of Income

a. Universities



b. Corporations



The Instrument

To ascertain how university and corporation chiefs perceive the external environment, the authors wrote 21 statements describing conditions or trends which are, or have the potential to be, emerging social, technological, ecological, political, or economic issues. Respondents were asked to assume that all 21 conditions came to pass and were directed to: (1) indicate what kind of impact (very negative to very positive) each condition would have on the operation of their own organizations, and (2) indicate what kind of opportunity (little to great) the condition would provide for cooperation between universities and corporations.

The 21 environmental conditions presented were:

1. Median age of U.S. population rises.
2. U.S. population becomes more Hispanic and Asian.
3. Population shift to "sunbelt" continues.
4. Percentage of women in workforce increases.
5. Majority of blacks remains outside mainstream politics and economics.
6. Urbanization spreads further into countryside.
7. U.S. economy becomes more globally integrated.
8. U.S. economic growth continues to level off.
9. Shift from labor- to knowledge-intensive work increases.
10. Unemployment remains near current level.
11. Political power is more decentralized.
12. Government involvement in economic decision making increases.
13. Energy resources become scarcer.
14. Information technology expands in homes and work places.

15. High technology in life science is commercially deployed.

16. Robots are adopted throughout industry.

17. Public concern for quality of life mounts.

18. Infrastructures of older cities deteriorate further.

19. Pollution of air, water, and land increases.

20. Public elementary and secondary schools decline in quality.

21. Third world demands more U.S. economic development aid.

To ascertain how university and corporation chiefs compared their counterpart organizations, the authors wrote seven statements contrasting the characteristics of universities and corporations. The statements presented the contrasts as fact (regardless of whether they are founded or unfounded) and respondents were directed to indicate whether they agreed or disagreed with them.

The seven statements presented were:

1. The university's diffused pursuit of knowledge is incompatible with the corporation's focused pursuit of profit.

2. The corporation is responsible to only one constituency, but the university must be responsible to multiple constituencies.

3. The products of academic activity are not susceptible to the same kinds of evaluation as are the products of business activity.

4. Corporations organize activities in shorter timeframes than universities do.

5. University personnel are not expected to carry workloads as heavy as those that corporation personnel carry.

6. Business processes are means to specified ends while academic processes may be ends to themselves.

7. University management may not be held accountable for outputs to the extent that corporate management is held accountable.

Findings: Impacts of Environmental Conditions

What conditions of the external environment do university and corporation chief executives see having the greatest impacts on their future operations? Are those impacts seen as positive or negative?

The respondents evaluated the environmental conditions on a scale of 1 to 5, from very negative (1) to very positive (5). A score of 3 was the midpoint. Table 1 shows the conditions, in rank order, receiving high mean scores (≥3.5), that is, perceived as having positive impacts, by the university and business groups.

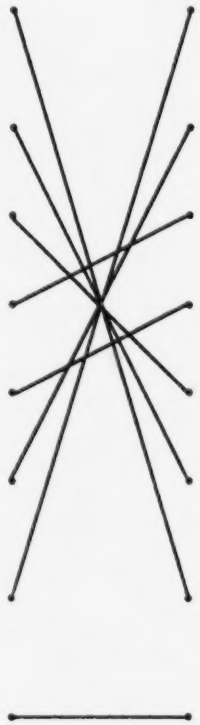
Table 1. Positive Impacts

University Ranking	Business Ranking
Shift from labor- to knowledge-intensive work continues.	Information technology expands in homes and workplaces.
Public concern for quality of life mounts.	U.S. economy becomes more globally integrated.
Information technology expands in homes and workplaces.	High technology in life science is commercially deployed.
High technology in life science is commercially deployed.	Shift from labor- to knowledge-intensive work continues.
U.S. economy becomes more globally integrated.	Public concern for quality of life mounts.
Percentage of women in workforce increases.	Robots are adopted throughout industry.
Robots are adopted throughout industry.	

Table 2 shows conditions, ranked high to low, which received low mean scores (≤2.5). These are perceived as having negative impacts.

Table 2. Negative Impacts

University Ranking	Business Ranking
Government involvement in economic decision making increases.	Majority blacks outside mainstream politics and economics.
Pollution of air, water, and land increases.	Energy resources become scarcer.
Unemployment remains near current levels.	U.S. economic growth continues to level off.
U.S. economic growth continues to level off.	Infrastructures of older cities deteriorate further.
Infrastructures of older cities deteriorate further.	Unemployment remains near current level.
Energy resources become scarcer.	Pollution of air, water, and land increases.
Majority blacks outside mainstream politics and economics.	Government involvement in economic decision-making increases.
Public elementary and secondary schools decline.	Public elementary and secondary schools decline.



The coincidence of rankings of the positive impacts (≥3.5) and negative impacts (≤2.5) indicate that, in general, university and business respondents saw the environmental conditions having similar impacts on their respective organizations. In only one case did the positive and negative ratings not coincide: university respondents rated the condition, "Percentage of women in workforce increases," among the positive; business respondents did not.

There was a statistically significant difference, at the .05 level of probability, in mean scores of the two groups regarding six conditions. For each of these six, the university score was higher, indicating a more positive (or less negative) perception. They were:

	Univ. Mean	Bus. Mean
Percentage of women in workforce increases.	3.7	3.3
Shift from labor- to knowledge-intensive work continues.	4.3	3.6
Government involvement in economic decision making increases.	2.5	2.1
Information technology expands in homes and workplaces.	4.2	3.8
High technology in life science is commercially deployed.	4.0	3.7
Public concern for quality of life mounts.	4.3	3.5

There was an exceptionally high degree of concurrence within each group of respondents. Statistically significant differences were found only in the case of university presidents' responses to the condition, "Population shift to 'sunbelt' continues."

Findings: Opportunities for Cooperation

Which conditions, whether perceived as having positive or negative impacts, were seen as providing opportunity for university-private sector collaboration? The 21 environmental conditions were rated again on a scale of 1-5 indicating little opportunity (1) to great opportunity (5). A score of 3 was the midpoint. Table 3 shows the conditions, ranked high to low, which received high mean scores (≥3.5) for the two groups.

Table 3. Great Opportunities

University Ranking	Business Ranking
Shift from labor- to knowledge-intensive work continues.	Shift from labor- to knowledge intensive work continues.
Information technology expands in homes and work places.	Public elementary and secondary schools decline.
High technology in life science is commercially deployed.	Information technology expands in homes and workplaces.
Public concern for quality of life mounts.	High technology in life science is commercially deployed.
U.S. economy becomes more globally integrated.	U.S. economy becomes more globally integrated.
Pollution of air, water, and land increases.	Energy resources become scarcer.
Robots are adopted throughout industry.	Public concern for quality of life mounts.
Energy resources become scarcer.	Pollution of air, water, and land increases.
Public elementary and secondary schools decline.	
Percentage of women in workforce increases.	
Urbanization spreads further into country-side.	
Median age of U.S. population rises.	

There was a general concurrence between university and business respondents regarding opportunities for cooperation. University scores tended to be higher across-the-board with 12 conditions receiving high opportunity ratings (≥ 3.5) from

university presidents. Only eight conditions were so rated by business.

In nine of the 21 cases, the difference in mean scores between the two groups was statistically significant at the .05 level of probability. These were:

	Univ. Mean	Bus. Mean
Median age of U.S. population rises.	3.5	2.8
Percentage of women in workforce increases.	3.7	3.3
Urbanization spreads further into countryside.	3.5	3.1
U.S. economy becomes more globally integrated.	4.0	3.7
Shift from labor- to knowledge-intensive work continues.	4.5	4.1
Information technology expands in homes and workplaces.	4.3	3.9
High technology in life science is commercially deployed.	4.3	3.8
Robots are adopted throughout industry.	3.8	3.4
Public concern for quality of life mounts.	4.2	3.7

Again, the only differences <u>within</u> groups occurred with the condition, "Population shift to 'sunbelt' continues," where university respondents differed among themselves.

The conditions with highest opportunity ratings from both university and business repsondents tended to be those seen as having positive impacts on university and business operations. Of the eight conditions rated by <u>both</u> groups of respondents as

providing the greatest opportunity for university-private sector cooperation, the top five were evaluated as having very positive impacts. Table 4 shows the relationship between impact and opportunity ratings.

Table 4. Impact and Opportunity

Opportunity Ranking	Condition	Opportunity Means All Resp.	Univ.	Bus.	Impact Means All Respondents	
1)	Shift from labor- to knowledge-intensive work continues.	4.4	4.5	4.1	4.1	positive
2)	Information technology expands in homes and work places.	4.2	4.3	3.9	4.1	positive
3)	High technology in life science is commercially deployed.	4.1	4.3	3.8	4.0	positive
4)	Public concern for quality of life mounts.	4.1	4.2	3.7	4.1	positive
5)	U.S. economy becomes more globally integrated.	4.0	4.0	3.7	3.7	positive
6)	Public elementary and secondary schools decline in quality.	3.9	3.8	4.1	1.7	negative
7)	Pollution of air, water, and land increases.	3.8	3.9	3.6	2.3	negative
8)	Energy resources become scarcer.	3.8	3.8	3.7	2.3	negative

Findings: Inherent Characteristics of Universities and Corporations

While there is general convergence between university and business respondents in their perceptions of the implications of external environment conditions, there is general divergence in their perceptions of some internal features of universities and corporations. The seven statements contrasting universities and corporations were scored on a 6-point scale ranging from strongly disagree (1) to strongly agree (6). A score of 3.5 was the midpoint. Table 5 shows the university and business respondents' mean scores for each statement.

Statistically significant differences were found between the two groups on all but two items. Both groups concurred in disagreeing with statement #1 and both groups concurred in agreeing with statement #4.

While both groups tended to reject statement #2, business respondents disagreed with greater intensity than university respondents.

Three statements, 5, 6, and 7, elicited agreement from business respondents and disagreement from university respondents.

Within the business group, there were statistically significant differences regarding statements 2 and 3. Within the university group, there were statistically significant differences on statement 3 only.

Table 6 shows the relative agreement and disagreement of the two groups with each statement.

Table 5. Inherent Differences

Statement	University Mean	Business Mean
1. The university's diffused pursuit of knowledge is incompatible with the corporation's focused pursuit of profit.	2.3	2.5
2. The corporation is responsible to only one constituency but the university must be responsible to multiple constituencies.	3.2	2.2 (*)
3. The products of academic activity are not susceptible to the same kinds of evaluation as are the products of business activity.	3.7	3.1 (*)
4. Corporations organize activities in shorter timeframes than universities do.	4.2	4.0
5. University personnel are not expected to carry workloads as heavy as those that corporation personnel carry.	2.2	4.1 (*)
6. Business processes are means to specified ends while academic processes may be ends to themselves.	3.4	3.9 (*)
7. University management may not be held accountable for outputs to the extent that corporate management is held accountable.	3.1	4.2 (*)

(*) The difference between these mean scores is statistically significant at the .05 level of probability.

Table 6. Relative Agreement/Disagreement

Mean Score		University Response	Business Response	
4.2	(timeframes)	#4	#7	(accountability)
4.1			#5	(workloads)
4.0			#4	(timeframes)
3.9			#6	(ends/means)
3.8				
3.7	(evaluation)	#3		
3.6				
--3.5				
3.4	(ends/means)	#6		
3.3				
3.2	(constituency)	#2		
3.1	(accountability)	#7	#3	(evaluation)
3.0				
2.9				
2.8				
2.7				
2.6				
2.5			#1	(knowledge/profit)
2.4				
2.3	(knowledge/profit)	#1	#2	(constituency)
2.2	(workloads)	#5		

Discussion

Data collected by the survey questionnaire indicated a definite convergence of views within and between the university and business repondent groups regarding the external environment. They perceived the environment conditions to have virtually the same kinds of impacts on their respective organizations. They see themselves "in the same boat' vis-a-vis changes in the external environment.

In general, the two groups converge in viewing technological issues most positively and ecological issues most negatively. Both see the decline of the public schools as having the most negative impact on their future operations. There is less

convergence--but no real divergence--regarding social, political, and economic issues.

Regarding the kinds of issues seen to provide the greatest opportunity for university-private sector collaboration, again respondents converged on technological and ecological issues plus the public schools. Moreover, the issues they selected as opportunity-providing clearly fit together. Will pollution and energy depletion issues be alleviated by the labor to knowledge shift in the economy and resolved with the commercial deployment of high technology in life science? Will the public school decline slow the labor to knowledge shift in the U.S.? Or, will the schools get sorely needed help because of the shift? Is the new global economy--made possible by the new information technology--the universal organizer for all these issues?

For respondents, opportunity may be tied to feasibility. Were the issues, "Government involvement in economic decision making increases" (ranked the second most negative by business) and "Majority of blacks remains outside mainstream politics and economics" (ranked second most negative by university) considered to be beyond the capacity of universities and corporations to solve?

Regarding the inherent differences of universities and corporations, the respondents converged in rejecting one popular claim concerning the incompatibility of academic and business goals, that is, knowledge vs. profit. Otherwise, the two groups parted company on some core characteristics.

The two statements (5 and 7) that contrasted the workloads of university and corporation personnel and the accountability of

university and corporation management elicited the widest divergence of perception between university and business respondents. The business respondents clearly accepted the popular perception that university personnel do not work as hard as corporation personnel. University respondents just as clearly rejected it. The difference between the two groups over the statement on management accountability is, however, not so clearly drawn. That corporation executives strongly agree that university executives "may not be held accountable" to the extent that they themselves are, and that university executives tend to disagree with this notion is not easily explained. A tempting explanation is that respondents read the statement as "university management <u>is</u> not accountable . . ."

Evaluation of academic products is evidently a confusing issue within the academic community and the business community. The statement on this subject (3) brought forth divergent responses within both groups. This finding reflects the well publicized controversies over the related subjects of promotion, tenure, and salary.

<u>Conclusions</u>

The consistency of perceptions of university and corporation respondents regarding the external environment suggests they share some common values and, therefore, may share a common work agenda. This finding bodes well for the establishment of a university-private sector synergy for public service.

What they do not share, however, are common opinions regarding their counterpart organizations. If their views

reflect those of the two populations, it may be that university and corporation executives need to know more about each other's work. At the bottom of his or her survey questionnaire, one respondent added the comment, "The university and the corporation need to exchange administrators for one day a week." Perhaps that is a good idea.